

CLAIMS

What is claimed is:

1. A process for de-germinating corn kernels comprising, in the sequence indicated:
 - a first tempering step;
 - a polishing step;
 - a second tempering step; and
 - a friction step.
2. The process as in claim 1 wherein:
 - said friction step comprising applying friction forces to said corn kernels between at least two elastic surfaces.
3. The process as in claim 2 wherein:
 - each of said at least two elastic surfaces comprising rubber surfaces.
4. The process as in claim 2 wherein:
 - each of said at least two elastic surfaces comprising polyurethane surfaces.
5. The process as in claim 2 wherein:
 - said at least two elastic surfaces comprising surfaces of opposing rotating cylinders.
6. The process as in claim 5 wherein:
 - said opposing rotating cylinders operable at differing tangential velocities.
7. The process as in claim 6 wherein:
 - at least one of said opposing rotating cylinders adjustable in relation to the other said opposing rotating cylinder for adjustment of the friction forces applied to said corn kernels.

1 8. The process as in claim 2 wherein:

2 said first tempering step including wetting said corn kernels and soaking said
3 corn kernels for a sufficient soaking period of time to allow penetration of wetting
4 solution to soften and expand the corn kernel bran.

5 9. The process as in claim 8 wherein:

6 said first tempering step terminating prior to substantial penetration of wetting
7 solution in the corn kernel endosperm or the corn kernel germ.

8 10. The process as in claim 8 wherein:

9 said soaking period of time lasting from three to fifteen minutes.

10 11. The process as in claim 2 wherein:

11 said polishing step comprising providing alternating cycles of compressive forces
12 and relaxation of said corn kernels to remove the corn kernel bran from said corn kernels.

13 12. The process as in claim 2 wherein:

14 said second tempering step comprising wetting said corn kernels and soaking said
15 corn kernels to soften and expand the corn kernel germ.

16 13. The process as in claim 12 wherein:

17 said second tempering terminating prior to absorption of sufficient wetting
18 solution in the corn kernel endosperm to break down cellular bonds within a starch
19 structure of said endosperm.

20 14. A process for de-germinating corn kernels comprising, in the sequence indicated:

21 a first tempering step including wetting said corn kernels and soaking said corn
22 kernels to for a sufficient period of time to allow penetration of wetting solution to soften
23 and expand the corn kernel bran without substantial penetration of wetting solution in the
24 corn kernel endosperm or the corn kernel germ;

1 a polishing step for removing said bran from said corn kernels;
2 a second tempering step comprising wetting said corn kernels and soaking said
3 corn kernels to soften and expand said germ without absorption of sufficient wetting
4 solution in said endosperm to break down cellular bonds within a starch structure of said
5 endosperm; and
6 a friction step comprising applying friction forces to said corn kernels between at
7 least two elastic surfaces.

8 15. The process as in claim 14 wherein:

9 said at least two elastic surfaces comprising surfaces of opposing rotating
10 cylinders;

11 said opposing rotating cylinders operable at differing tangential velocities; and

12 at least one of said opposing rotating cylinders adjustable in relation to the other
13 said opposing rotating cylinder for adjustment of the friction forces applied to said corn
14 kernels.

15 16. The process as in claim 14 wherein:

16 said first tempering step soaking period of time lasting from three to fifteen
17 minutes.

18 17. The process as in claim 14 wherein:

19 said polishing step comprising providing alternating cycles of compressive forces
20 and relaxation of said corn kernels to remove said bran of said corn kernels.

21 18. The process as in claim 14 wherein:

22 a separating step after said friction step for separating said germ from said corn
23 kernels.